REMARKS

The Office Action dated October 4, 2002, has been received and carefully noted. The preceding amendments and the following remarks are submitted as a full and complete response thereto. Claims 9-12, 15 and 17 have been amended. Claims 11-12, 15 and 17 are amended as to matters of form only. Support for the amendment to claim 9 can be found in Figure 14 of the present invention. No new matter has been added. Claims 9-15 and 17-18 are pending in this application and are submitted for consideration.

Claims 10-12, 15 and 17 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. In particular, it was alleged in the Office Action that there is insufficient antecedent basis for the limitation "the outer joint ring of said fixed type constant velocity universal joint" in claim 10, line 2; claim 11, line 9; claim 12, line 2; claim 15, line 4; and claim 17, line 3. Each of claims 10-12, 15 and 17 are amended herein to change "the outer joint ring of said fixed type constant velocity universal joint" to --an outer joint ring of said fixed type constant velocity universal joint.--

Claim 11 was further rejected as being indefinite because the limitation "said mouse portion" lacks antecedent basis. This limitation is amended to --said house portion--.

Thus, Applicants submit that claims 10-12, 15 and 17 comply with 35 U.S.C. § 112 and request that the rejection be withdrawn.

Claims 9 and 13 were rejected under 35 U.S.C. § 102(b) as being anticipated by GKN. Claim 10 was rejected under 35 U.S.C. § 103(a) as being unpatentable over GKN in view of U.S. Patent No. 5,975,767 to Mizukoshi et al. ("Mizukoshi"). Claims 12, 15, 17 and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over GKN in view of U.S. Patent No. 5,607,241 to Fukumura. Claim 14 was rejected under 35 U.S.C. § 103(a) as being unpatentable over GKN in view of U.S. Patent No. 5,230,936 to Misumi et al. ("Misumi"). Each of the preceding rejections are based on the primary reference GKN and are substantially identical to the rejections stated in the Office Action dated February 20, 2002. Applicants respectfully traverse the rejections and submit that claims 9-10, 12-15 and 17-18 recite subject matter which is neither disclosed nor suggested by any combination of the prior art.

Claim 9, upon which claims 10, 12-15 and 17-18 depend, defines a drive wheel bearing assembly that includes a fixed type constant velocity universal joint and a sliding type constant velocity universal joint. The fixed type constant velocity universal joint is coupled to a wheel bearing, mounted to one end portion of an intermediate shaft, and the sliding type constant velocity universal joint is coupled to a differential, mounted to the other end portion of the intermediate shaft. An allowable plunging down to a bottom portion of an outer joint ring of the sliding type constant velocity universal joint is set substantially equal to a sum of a width of an inner joint ring of the fixed type constant velocity universal joint and a length of a projection above an edge surface of said inner joint ring, at a minimum operative angle of the sliding type constant velocity universal joint.

GKN lists a constant velocity plunging joint which has an angular excursion of 24° and has an axial plunging movement of up to 55 mm. See page 12 of GKN. At the bottom left, GKN lists a double offset (DOJ) plunging joints chart and lists the shaft diameters for different types of joints. The shaft diameters are in the range of 24 mm to 29 mm. The width of the inner joint ring of GKN is not described in any fashion. The drawing shown on page 12 appears to be small and inaccurate. The shaft diameter does not indicate the width of the inner joint ring, which is shown in Fig. 14 of the present invention as K_1.

GKN does not show or describe with any accuracy the distance for an allowable plunging down to the bottom portion of an outer joint ring at a minimum operative angle. GKN appears to describe an allowable plunging down at a maximum angular excursion. Also, GKN does not show or suggest a projection above the edge surface of the inner joint ring of the intermediate shaft, as defined by the claim 9 of the present invention. In contrast to GKN, the present invention recites that the allowable plunging is set to a dimension which is substantially equal to the width of the inner joint ring summed with the length of a projection above the edge surface of the inner joint ring of the fixed type constant velocity universal joint. None of the cited prior art shows or suggests this limitation. Thus, Applicants submit that the cited prior art fails to show or suggest each and every element of claims 9, 10, 12-15, and 17-18. Accordingly, Applicants request that the rejection be withdrawn and claims 9, 10, 12-15, and 17-18 be allowed.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the Applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account No. 01-2300.

Respectfully submitted,

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Enclosure: Marked-up Copy of the Amended Claims

MARKED-UP COPY OF THE AMENDED CLAIMS

9. (Amended) A drive wheel bearing assembly having a fixed type constant velocity universal joint, coupled to a wheel bearing, mounted to one end portion of an intermediate shaft, and a sliding type constant velocity universal joint, coupled to a differential, mounted to the other end portion of said intermediate shaft,

wherein an allowable plunging down to a bottom portion of an outer joint ring of said sliding type constant velocity universal joint is set [to at least] substantially equal to a sum of a width of an inner joint ring of said fixed type constant velocity universal joint and a length of a projection above an edge surface of said inner joint ring, at a minimum operative angle of the sliding type constant velocity universal joint.

10. (Twice Amended) A drive wheel bearing assembly according to claim 9, wherein a stem portion of [the] an outer joint ring of said fixed type constant velocity universal joint is made hollow, and the hollow portion is allowed to communicate with a house portion of the outer joint ring.

11. (Twice Amended) A drive wheel bearing assembly having a fixed type constant velocity universal joint, coupled to a wheel bearing, mounted to one end portion of an intermediate shaft, and a sliding type constant velocity universal joint, coupled to a differential, mounted to the other end portion of said intermediate shaft,

wherein an allowable plunging down to a bottom portion of an outer joint ring of said sliding type constant velocity universal joint is set to at least a width of an inner joint ring of said fixed type constant velocity universal joint at a minimum operative angle of the sliding type constant velocity universal joint,

wherein a stem portion of [the] an outer joint ring of said fixed type constant velocity universal joint is made hollow, and the hollow portion is allowed to communicate with a house portion of the outer joint ring,

wherein an end cap is mounted to a communicating region between the hollow portion of said stem portion and said [mouse] house portion, and a communicating portion is formed substantially at a center of the end cap.

12. (Twice Amended) A drive wheel bearing assembly according to claim 9, wherein said wheel bearing is plastically connected to [the] an outer joint ring of said fixed type constant velocity universal joint.

15. (Twice Amended) A drive wheel bearing assembly according to claim 9, wherein one of a plurality of rows of races in said wheel bearing is formed on an outer diameter portion of a hub ring constituting the wheel bearing, and another race is formed on an outer diameter portion of a separate inner ring engaging [the] an outer joint ring of said fixed type constant velocity universal joint.

17. (Twice Amended) A drive wheel bearing assembly according to claim 9, wherein at least one of a plurality of rows of races of said wheel bearing is formed integrally on an outer diameter portion of [the] an outer joint ring of said fixed type constant velocity universal joint.